CLAIMS

What is claimed is:

- 1 A method comprising: 1.
- receiving a code segment having a plurality of instructions, the code segment having an 2
- outer scope and a number of inner scopes, wherein the plurality of instructions comprise a 3
- number of pointers, wherein at least one of the number of pointers is restricted; and 4
- determining, within one of the number of inner scopes, whether at least two pointers of 5
- the number of pointers are aliases.
- The method of claim 1, comprising determining a base pointer for each pointer of 2.
- 2 the number of pointers.
- The method of claim 2, wherein the determining a base pointer for each pointer of 1 3.
- 2 the number of pointers comprises:
- grouping pointers together upon determining that the pointers are copied to a 3
- pointer that is not a restricted pointer. 4
- The method of claim 3, wherein there is no grouping of pointers when the pointers 1 4.
- 2 have distinct base pointers.
- 1 5. The method of claim 3, comprising for each instruction of the plurality of
- instructions that accesses a pointer, determining which at least one restricted pointer is 2
- within the scope of the pointer when the pointer is accessed. 3
- 1 6. The method of claim 4, wherein the determining, within one of the number of
- 2 inner scopes, whether at least two pointers of the number of pointers are aliases is based
- 3 on the base pointer for each of the number of pointers.

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21

1

- 1 7. The method of claim 3, wherein the determining, within one of the number of
- 2 inner scopes, whether at least two pointers of the number of pointers are aliases is based
- 3 on, for each instruction of the plurality of instructions that accesses the pointer, which at
- 4 least one restricted pointer is within the scope of the pointer, when the pointer is accessed.
 - 8. A method comprising:
- 2 receiving a code segment having a plurality of instructions, wherein the plurality
- 3 of instructions comprise a number of pointers, wherein at least one of the number of
- 4 pointers is restricted, and wherein the at least one restricted pointer is in-scope or out-of-
- 5 scope; and
- determining whether at least two pointers of the number of pointers are aliases
- 7 when each pointer of the at least two pointers is out-of-scope relative to the other pointers
- 8 of the at least two pointers.
- 1 9. The method of claim 8 comprising determining a base pointer for each pointer of
- 2 the number of pointers.
- 1 10. The method of claim 9, comprising determining, for each pointer of the number of
- 2 pointers, whether each at least one restricted pointer is in-scope when the pointer of the
- 3 number of pointers is accessed.
- 1 11. The method of claim 10 wherein the determining whether at least two pointers of
- 2 the number of pointers are aliases is based on determining a base pointer for each pointer
- 3 of the number of pointers.

1

- 1 12. The method of claim 10 wherein the determining whether at least two pointers of
- 2 the number of pointers are aliases is based on determining a base pointer for each pointer
- 3 of the number of pointers, and on determining for each pointer of the number of pointers
- 4 whether each at least one restricted pointer is in-scope when the pointer is accessed.
 - 13. A system comprising:
- a memory unit to include a code segment having a plurality of instructions, the
- 3 code segment having an outer scope and a number of inner scopes, wherein the plurality
- 4 of instructions comprise a number of pointers, wherein at least one of the number of
- 5 pointers is restricted; and
- a compiler unit coupled to the memory, the compiler unit to determine within one
- of the number of inner scopes, whether at least two pointers of the number of pointers are
- 8 aliases.
- 1 14. The system of claim 13, wherein the compiler unit is to determine a base pointer
- 2 for each pointer of the number of pointers.
- 1 15. The system of claim 14, wherein the compiler unit is to determine, for each
- 2 instruction of the plurality of instructions that accesses a pointer, which at least one
- 3 restricted pointer is within the scope of the pointer when the pointer is accessed.
- 1 16. The system of claim 15, wherein the compiler unit is to determine, within one of
- 2 the number of inner scopes, whether at least two pointers of the number of pointers are
- 3 aliases based on, for each instruction of the plurality of instructions that accesses a
- 4 pointer, which of the restricted pointers is within the scope of the pointer when the pointer
- 5 is accessed.

- 1 17. A machine-readable medium that provides instructions, which when executed by a
- 2 machine, cause said machine to perform operations comprising:
- 3 receiving a code segment having a plurality of instructions, the code segment having an
- 4 outer scope and a number of inner scopes, wherein the plurality of instructions comprise a
- 5 number of pointers, wherein at least one of the number of pointers is restricted; and
- 6 determining, within one of the number of inner scopes, whether at least two pointers of
- 7 the number of pointers are aliases.
- 1 18. The machine-readable medium of claim 17, comprising determining a base
- 2 pointer for each pointer of the number of pointers.
- 1 19. The machine-readable medium of claim 18, comprising for each instruction of the
- 2 plurality of instructions that accesses a pointer, determining which at least one restricted
- 3 pointer is within the scope of the pointer when the pointer is accessed.
- 1 20. The machine-readable medium of claim 19, wherein the determining, within one
- 2 of the number of inner scopes, whether at least two pointers of the number of pointers are
- 3 aliases is based on the base pointer for each of the number of pointers.
- 1 21. The machine-readable medium of claim 19, wherein the determining, within one
- 2 of the number of inner scopes, whether at least two pointers of the number of pointers are
- 3 aliases is based on, for each instruction of the plurality of instructions that accesses the
- 4 pointer, which at least one restricted pointer is within the scope of the pointer, when the
- 5 pointer is accessed.

- 1 22. A machine-readable medium that provides instructions, which when executed by a machine, cause said machine to perform operations comprising:
- 3 receiving a code segment having a plurality of instructions, wherein the plurality
- 4 of instructions comprise a number of pointers, wherein at least one of the number of
- 5 pointers is restricted, and wherein the at least one restricted pointer is in-scope or out-of-
- 6 scope; and
- determining whether at least two pointers of the number of pointers are aliases
- 8 when each pointer of the at least two pointers is out-of-scope relative to other pointers of
- 9 the at least two pointers.
- 1 23. The machine-readable medium of claim 22, comprising determining a base
- 2 pointer for each pointer of the number of pointers.
- 1 24. The machine-readable medium of claim 23, comprising determining, for each
- 2 pointer of the number of pointers, whether each at least one restricted pointer is in-scope
- 3 when the pointer of the number of pointers is accessed.
- 1 25. The machine-readable medium of claim 24, wherein the determining, within one
- 2 of the number of inner scopes, whether at least two pointers of the number of pointers are
- 3 aliases is based on the base pointer for each of the number of pointers.
- 1 26. The machine-readable medium of claim 24, wherein the determining whether at
- 2 least two pointers of the number of pointers are aliases is based on determining a base
- 3 pointer for each pointer of the number of pointers, and on determining for each pointer of
- 4 the number of pointers whether each at least one restricted pointer is in-scope when the
- 5 pointer is accessed.